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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/601,004	09/11/2000	Kazuo Toraichi	A-371	4200

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EXAMINER
DO, CHAT C

ART UNIT	PAPER NUMBER
2193	

DATE MAILED: 08/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/601,004	TORAICHI ET AL.
	Examiner	Art Unit	
	Chat C. Do	2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _26 May 2006_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1,2,4 and 6_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1,2,4 and 6_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   This communication is responsive to Amendment filed 05/26/2006.

2.   Claims 1-2, 4, and 6 are pending in this application. Claims 1 and 6 are independent

claims. This Office Action is made final.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
> subject matter which the applicant regards as his invention.

4.   Claims 1-2, 4 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

Re claim 1, the limitation "a two variable data" in line 1 is mis-descriptive

because the sampling function is operated based on only one variable dimension "t". For

examination purposes, the examiner considers the limitation as an one variable data.

Claim 6 has the same rejection.

Thus, claims 2 and 4 are also rejected for being dependent on the rejected base

claim 1.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

6.   Claims 1-2, 4, and 6 are rejected under 35 U.S.C. 103(a) as being obvious over Masaru et

al. ("A Smooth Signal Generator Based on Quadratic B-spline Functions") in view of Maltsev et

al. (U.S. 6,018,597).

Re claim 1, Masaru et al. disclose a two variable data interpolation system (e.g.

abstract, Introduction section lines 16-18 page 1252, Preliminaries section lines 1-5 page

1252, wherein two variable data would be h and k) for processing data (e.g. discrete-time

signal in Preliminaries section line 3 page 1252), wherein an value between a plurality of

discrete data values is interpolated by performing convolution operation (e.g. equations

1-6 page 1252, particularly equations 3-4 for convolution) corresponding to the plurality

of discrete data positioned at equal intervals (e.g. Preliminaries section lines 1-4 page

1252) in a two dimensional space using a sampling function (e.g. phi-function as seen n

Figure 1 in page 1253 and equation 2 in page 1252) that is differentiable finite times (e.g.

right column in page 1253) and has values of a local support (e.g. Figure 1 and equation 2

wherein parameter h and l are normalized or set to 1, then equation 2 will have specific

finite values in a range [-3/2,3/2] and zero value outside that range; left column lines 1-5

page 1253) wherein with letting a third order B spline function be F(t), the sampling

function, H(t) is defined as follows: $H(t) = -F(t+1/2)/4 + F(t) - F(t-1/2)/4$ (e.g. equation 4-

6). Masaru et al. fail to disclose that the data is image data. However, Maltsev et al.

disclose in Figure 4 an interpolation process of an image data (e.g. 102-106 in Figure 4)

utilizing convolution. Therefore, it would have been obvious to a person having ordinary

skill in the art at the time the invention is made to add image data into the interpolation

system as seen in Maltsev et al.'s Figure into Masaru et al.'s invention because it would

enable to efficiently reduce or minimize errors and noise in modifying image data (e.g.

col. 1 lines 32-45).

Re claim 2, Masaru et al. further disclose the sampling function is a function that

is differentiated only once over a whole region (e.g. capable of differentiated only once

over a region due to smooth function, Introduction section lines 16-18 page 1252 and

right column in page 1253).

Re claim 4, Masaru et al. further disclose the third order B spline function F(t) is

disclosed in page 7-8 (e.g. F(t) is as function disclose in equation 2 page 1252 right

column wherein h =1 and l =0 with scaling factor).

Re claim 6, it is an apparatus claim of claim 2. Thus, claim 6 is also rejected

under the same rationale as cited in the rejection of rejected claim 2.

Response to Arguments

7.   Applicant's arguments filed 05/26/2006 have been fully considered but they are not

persuasive.

        a.   The applicant argues in page 6 for claims 1-2, 4, and 6 rejected under 35 U.S.C.

112 that the system is a two variable data interpolation system.

The examiner respectfully submits that the applicant states the system is a two variable data interpolation system but does not provide any explanation or evidence to support the system as a two variable data interpolation. Therefore, the rejection under 35 U.S.C. 112 in the previous Office is maintained.

b.   The applicant argues in page 7 for claims rejected under U.S.C 103 that the cited reference does not disclose the function H(t) and it is a function of local support.

The examiner respectfully submits that the cited reference clearly discloses, as point out with full explanation in the previous Office action, the H(t) is a local support in Figure 1 and equation 4 as the function H(t) by substituting the equations (5-6) into 4.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chat C. Do whose telephone number is (571) 272-3721. The examiner can normally be reached on M => F from 7:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chaki Kakali can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chat C. Do
Examiner
Art Unit 2193

August 4, 2006

KAKALI CHAKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100